

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 33

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte KENNETH R. ARCHIBALD
and MELVIN L. SCOTT, JR.

Appeal No. 1998-1289
Application 07/906,492

HEARD: NOVEMBER 16, 2000

Before ABRAMS, McQUADE, and LAZARUS, Administrative Patent Judges.

McQUADE, Administrative Patent Judge.

DECISION ON APPEAL

Kenneth R. Archibald et al. appeal from the final rejection of claims 24 through 26 and 28 through 41, all

of the claims pending in the application.¹ We affirm-in-part.

THE INVENTION

The invention relates to "a method for producing a full face wheel wherein a dual rim preform is produced by known rim rolling techniques and the rolled preform is split to produce two rims for use in producing wheels" (specification, page 4). Claims 24 and 31 are illustrative and read as follows:²

24. A method of producing a wheel for mounting a tire having two sealing beads, said method comprising the steps of:

(1) forming a double rim member having a sealing bead seat at both axial ends and a double well portion at a center position;

¹Claims 34 and 35 have been amended subsequent to final rejection.

²The record (see, for example, Paper No. 5) indicates that claims 24 and 25 were added to the instant application to provoke an interference with U.S. Patent No. 5,027,508 to Cissell II.

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(2) cutting the double well portion of said double rim member at a selected point on the double well portion to arrive at a pair of rims each having a cylindrical well portion of a desired width, the desired width being measured from the sealing bead seat; and

(3) mounting a disc to each of the pair of rims, the discs each having a cylindrical extension, by inserting the

cylindrical extension into the cylindrical well portion on the rims; whereby said tire sealing beads seat respectively on said disc and said rim at respective sealing bead seats thereof.

31. A method for producing a vehicle wheel assembly comprising the steps of:

(a) providing a wheel disc which includes an outboard tire retaining flange;

(b) forming a unitary dual rim preform comprising two connected partial wheel rims, the preform formed with an inboard tire retaining flange connected to an inboard tire bead seat at each axial end;

(c) determining a distinct axial length for each partial wheel rim;

(d) splitting the preform to produce two separate partial wheel rims having predetermined axial lengths, each partial wheel rim including an inboard tire retaining flange connected to an inboard tire bead seat at one axial end and a joining edge at an opposite axial end;

(e) positioning the wheel disc and one of the partial wheel rims in a fixture for locating the disc and the rim coaxially with the joining edge of the wheel rim adjacent to a portion of the wheel disc; and

(f) attaching the wheel disc to the wheel rim to form the wheel assembly.

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THE PRIOR ART

The references relied upon by the examiner as
evidence of obviousness are:

Nelson	1,691,491	Nov. 13, 1928
Adams et al. (Adams)	3,264,719	Aug. 9, 1966
Nobach	3,506,311	Apr. 14, 1970
Ware	3,612,614	Oct. 12,
1971		
Bache	4,106,172	Aug. 15, 1978
Overbeck et al. (Overbeck)	4,610,482	Sept. 9, 1986
Italian Patent Document ³	576398	May 5, 1958

THE REJECTIONS

Claims 24 through 26 stand rejected under 35 U.S.C.
§ 103(a) as being unpatentable over Ware in view of
Nelson.

Claims 28 through 30 stand rejected under 35 U.S.C.

³ An English language translation of this reference,
prepared on behalf of the United States Patent and Trademark
Office, is appended hereto.

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§ 103(a) as being unpatentable over Ware in view of
Nelson and Overbeck.

Claims 31 through 40 stand rejected under 35 U.S.C.
§ 103(a) as being unpatentable over Adams in view of
Bache and the Italian reference.

Claim 41 stands rejected under 35 U.S.C. § 103(a) as
being unpatentable over Adams in view of Bache, the
Italian reference and Nobach.⁴

Attention is directed to the appellants' main and
reply briefs (Paper Nos. 26 and 29) and to the examiner's
final rejection and main and supplemental answers (Paper
Nos. 19, 27 and 30) for the respective positions of the
appellants and the examiner with regard to the merits of
these rejections.⁵

⁴The record as a whole indicates that the examiner's
failure to restate this rejection in the main answer (Paper
No. 27) was inadvertent.

⁵As a result of the amendments made subsequent to final
rejection (see n.1, supra), the examiner has withdrawn the

DISCUSSION

I. The 35 U.S.C. § 103(a) rejections of claims 24 through
26 and 28 through 30

Ware, the primary reference in these rejections,
discloses

a method for the assembly of a vehicle wheel
having a load supporting disc part and a tire
supporting rim formed from at least one annular
rim part, compris[ing] securing in position at
least one of the said parts by injection of a
thermoplastic or thermosetting material in a
liquid or plastic state into at least one
circumferentially extending annular space formed
between cooperating configurations of two of the
said parts, then allowing the material to
solidify to form a locking member in situ
[column 1, lines 16 through 25].

The Figure 7 embodiment relied on by the examiner
involves a cast disc 2 shaped with an outboard rim part
12, and a separately formed inboard rim part 11. The

35 U.S.C. § 112, first paragraph, rejection of claim 34 and
the 35 U.S.C. § 112, second paragraph, rejection of claims 35
through 37 which were set forth in the final rejection (see
the advisory action mailed February 5, 1997, Paper No. 24).

outboard rim part 12 includes a stepped cylindrical extension 14 which fits within a stepped cylindrical portion 13 on the inboard rim part 11. These interfitting cylindrical components define an annular groove for accommodating an injected thermosetting or thermoplastic member which locks the disc 2 and rim part 11 together. When assembled, the wheel includes inboard and outboard tire bead seats and retaining flanges (corresponding to seats 4 and flanges 5 in the Figure 1 embodiment) and a depressed central portion or well (corresponding to central portion 3 in the Figure 1 embodiment) formed by the interfitting cylindrical components 13 and 14.

The disclosure in Ware pertaining to Figure 7 meets, or would have suggested, a wheel producing method responding to all of the limitations in claim 24 except for those relating to the formation of the rims from a double rim member. In this regard, Ware does not specify how the "rim" component (inboard rim part 11) of the wheel shown in Figure 7 is made.

Nelson discloses a rim making process comprising the steps of

providing a strip of metal, which may be rolled, at the rolling mill, to a form having the cross section which is to be given to the finished rims, . . . bending a strip of metal of this cross section, and of suitable length, to form an annulus, the adjacent ends of said strip being welded together so that a complete ring is formed, and, then, severing this annulus along the central, longitudinal plane to form two complete rims [page 1, lines 46 through 56].

According to Nelson, this process provides the benefits of "rims [that] can be manufactured more efficiently and at lower cost" (page 1, lines 8 through 10), "economies of construction" (page 1, line 26) and "a more convenient and economical production of these rims" (page 1, lines 94 and 95).

The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what

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the combined teachings of the references would have suggested to those of ordinary skill in the art. In re Keller, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981).

The examiner's conclusion (see pages 2 and 3 in the final rejection) that the combined teachings of Ware and Nelson would have suggested the method recited in claim

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is well founded. Nelson's description of the economic and efficiency advantages afforded by the production of two rims from a so-called "double rim member" would have provided the artisan with ample suggestion or motivation to employ similar steps to produce Ware's rim parts 11, thereby arriving at the method recited in claim 24. The appellants' position to the contrary (see pages 6 through 10 in the main brief and pages 4 and 5 in the reply brief) essentially rests on alleged individual deficiencies in Ware and Nelson vis-à-vis the claimed method. Non-obviousness, however, cannot be established by attacking references individually where, as here, the rejection is based upon the teachings of a combination of references. In re Merck & Co., Inc.,

800 F.2d 1091, 1097, 231 USPQ 375, 380 (Fed. Cir. 1986).

The appellants' related argument that Ware's use of a thermosetting or thermoplastic locking member teaches

away from the invention is also unpersuasive. Claim 24 does not contain any limitation which excludes or is otherwise inconsistent with such a locking member.

Claim 26 depends from claim 24 and requires the cylindrical extension on the wheel disc to extend axially across only a portion of the wheel rim well portion to position the disc concentrically upon the rim. As pointed out by the examiner (see page 5 in the main answer and page 2 in the supplemental answer), the cylindrical extension 14 on Ware's wheel disc 2 extends axially across only a portion of the wheel rim well portion because it stops short of the inclined wall of the well portion which leads to the tire bead seat on rim 11. This interpretation of Ware is in full accord with the limitation in parent claim 24 that the width of the recited well portion is measured from the sealing bead seat.

Thus, the combined teachings of Ware and Nelson justify the examiner's conclusion that the differences

between the subject matter recited in claims 24 and 26 and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art. Therefore, we shall sustain the standing 35 U.S.C. § 103(a) rejection of claims 24 and 26 as being unpatentable over Ware in view of Nelson.

In view of the appellants' statement that "[d]ependent claims 25, 28, 29 and 30 stand or fall with independent claim 24" (main brief, page 6), we also shall sustain the standing 35 U.S.C. § 103(a) rejection of claim 25 as being unpatentable over Ware in view of Nelson and the standing 35 U.S.C. § 103(a) rejection of claims 28 through 30 as being unpatentable over Ware in view of Nelson and Overbeck.

II. The 35 U.S.C. § 103(a) rejections of claims 31 through 41

Adams, the primary reference in these rejections, discloses "a method of manufacturing a wheel having a load supporting disc portion and at least a part of a rim portion formed together as a seamless unitary structure from a single metal blank" (column 1, lines 44 through 47). Of particular interest are the process steps depicted in Figures 4a through 4f whereby

[a] blank 60 is formed by circling a band of even gauge hot rolled strip and joining the ends by electric butt welding. The ends of the blank are flared by conventional methods and pressed in two stages as shown in FIGURES 4b and 4c to form the flanges 61 of a channel section. The base 62 and the outside of the flanges are supported by formers 63 and 63a (FIGURE 4c) and a contoured roller 64 is brought into contact with the blank to apply pressure to the outer peripheral edges of the flanges 61 to thicken up the junctions of the flanges 61 with the base 62, and to radius the edges of the flanges. The roller 64 also produces a circumferentially extending groove 65 (see FIGURE 4d) suitably positioned for subsequent parting of the blank into a rim part 67 with a tyre-retaining flange intergal [sic] with it and a loose flange 68. The formers 63, 63a may move axially during the rolling operation. The parting operation may be carried out with punches 66 as indicated in FIGURE 4d. The final shapes of the flanges are imposed by pressing the separate parts 67 and 68 as shown in FIGURE 4e, between formers 69, 69a the final form of the parts 67, 68 being shown

in FIGURE 4f [column 4, line 58, through column 5, line 5].

The rim part 67 and loose flange 68 formed by this process are adapted to be attached to the integral disc and rim part shown in Figure 1d (see column 4, lines 55 through 58).

Adams fails to meet a number of limitations in independent claim 31 including those requiring the provision of a wheel disc which includes an outboard tire retaining flange, the formation of a unitary dual rim preform having an inboard tire retaining flange and tire bead seat at each axial end, the splitting of the unitary dual rim preform to produce two separate partial wheel rims having an inboard tire retaining flange and tire bead seat at one end, and the positioning the wheel disc and one of the partial wheel rims in a fixture for attachment. The examiner's apparent determination (see page 4 in the final rejection and page 6 in the main answer) that Adams' loose flange 68 constitutes or could be used as a partial wheel rim of the sort recited in

claim 31 is completely devoid of factual support.

Bache discloses a method of friction welding a wheel rim 10 to a disc 11 wherein these components are accurately positioned with respect to one another in a friction welding apparatus.

The Italian reference discloses a wheel (see Figure 1) composed of a disc in the form of a wheel plate 1 and a rim in the form of a contoured ring 2, the wheel plate including an outboard tire retaining flange defined by shoulder 1a.

In proposing to combine Adams, Bache and the Italian reference (see page 4 in the final rejection), the examiner

concludes that it would have been obvious to a person having ordinary skill in the art at the time the invention was made (1) to utilize a fixture in the Adams method to accurately assemble the wheel components in view of Bache and (2) to employ a wheel disc with an outboard tire retaining flange in the Adams method in view of the Italian reference. This application of Bache and the Italian reference, however, still does not overcome the failure of Adams to meet the limitations in claim 31 requiring the production of two separate partial wheel rims each including an inboard tire retaining flange and bead seat from a unitary dual rim preform. Moreover, as argued by the appellants (see, for example, page 14 in the main brief), the proposed combination of Adams and the Italian reference would seem to result in a method which produces a loose flange 68 having no apparent use. This problematic outcome highlights the impermissible hindsight nature of the proposed reference combination.

Accordingly, we shall not sustain the standing

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35 U.S.C. § 103(a) rejection of claim 31, or of claims 32

through 40 which depend therefrom, as being unpatentable over Adams in view of Bache and the Italian reference.

We also shall not sustain the standing 35 U.S.C. § 103(a) rejection of claim 41, which depends from claim 31, as being unpatentable over Adams in view of Bache, the Italian reference and Nobach. In short, Nobach's disclosure of a wheel having a cast disc 22 does not cure the above noted deficiencies in the basic Adams/Bache/Italian reference combination.

SUMMARY

The decision of the examiner to reject claims 24 through 26 and 28 through 41 under 35 U.S.C. § 103(a) is affirmed with respect to claims 24 through 26 and 28 through 30 and reversed with respect to claims 31 through 41.

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No time period for taking any subsequent action in
connection with this appeal may be extended under 37
C.F.R. § 1.136(a).

AFFIRMED-IN-PART

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